

**Ministry Of Education  
El Qurein Administration Zone  
Al-Galaa G.L.S**

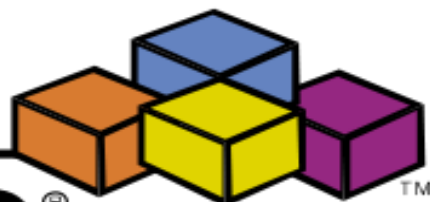


Microsoft  
**Visual Studio**

# **Computer**

Microsoft®

**Visual Basic®**



**THIRD YEAR PREPARATORY**

**First Term 2025**

*By*

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*Free Copy*

W. S. Hour

## Chapter 1: Problem Solving

### \* **Problem:-**

**Problem** is a situation that requires a solution or an objective you want to achieve through following consecutive steps sequentially.

### \* **Problem Solving:-**

**Problem Solving** is the steps, activities, and processes to be done to reach an output or objective.

### \* **Problem Solving Stages:-**

#### 1. **Problem Definition:**

Problem definition implies the identification of required outputs, available inputs and, arithmetic and logical operations to be executed.

#### 2. **Algorithm Preparation:**

- **Algorithm:** is one of the methods used to solve a problem through logically arranged procedures.
- One of the methods to represent algorithm is **flowchart**.
- **Flowchart:** It is a diagram that uses standard graphical symbols to illustrate the sequence of steps required for solving a problem or specific question.
- **Some advantages of flowcharts:**
  - a) Facilitating the reading and understanding of the problem.
  - b) Useful to explain the program to others
  - c) Helping in documenting the program.

#### 3. **Program design:**

Having drawn a “Flowchart”, to solve the problem, using a computer; we have to translate this flowchart into one of the programming languages.





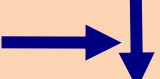
#### 4. **Program Testing:**

- During writing a program we unintentionally make some mistakes; e.g. writing a minus sign (-) instead of (+). We can't detect errors unless we begin entering data to the program with previously known results.
- Making sure that the program is free of errors.







#### 5. **Program Documentation:**

All steps taken for solving the problem that include: given Input, output, plan for solving the problem, drawn flowchart, programming language used for coding and, instructions, date of last modification of the program and, people who contribute to the program development process, to have the program documented to go back for feedback and correction.

✱ **The basic flowcharting symbols are:-**

Symbol					
Significance	Terminal	Input/Output	Process	Decision	Flow line

✱ **To construct a flowchart we should consider the following:-**

1. The flowchart should start with the Start symbol and end with the End  symbol.
2. A, B, C are variable names. A variable refers to a memory storage that holds a value.
3. The equation:  $C = A + B$ , indicates the sum of the value of A, to the value of B, and stores the result in C.
4. Entering values in A and B is done by using the term "Enter", inside the  parallelogram, you can also use another term to get the same meaning like "Read" or "Input" or "Get".
5. The sum equation is written inside the rectangle,  as it represents an arithmetic operation.
6. The output is expressed with a parallelogram  using the term "Output", we can also use another term like "Print".
7. Note that lines with arrows (flow lines) are from top to bottom  or from left to right  and show the exact order of an Algorithm.

## Simple Flowcharts

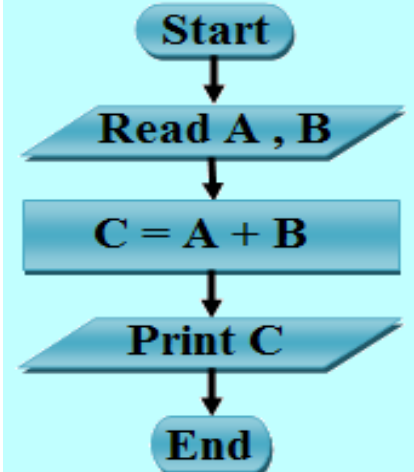
**Exercise 1:** Draw a flowchart for a program that will calculate the sum of two numbers entered by the user and display the result.

**First: Define the problem**

**Output:** The sum of two numbers.

**Input:** The first number is "A" and the second number is "B".

**Solution:**  $C = A + B$  where the result is "C".

Second :Algorithm	Third :Flowchart
<ol style="list-style-type: none"> <li>1- Start</li> <li>2- Enter the number A and the number B</li> <li>3- Performing the sum of the two numbers using this equation <math>C = A + B</math>, the output is C</li> <li>4- Print C</li> <li>5- End</li> </ol>	 <pre> graph TD     Start([Start]) --&gt; Read[/Read A, B/]     Read --&gt; Process[C = A + B]     Process --&gt; Print[/Print C/]     Print --&gt; End([End])         </pre>

**Dear Student: Remember:**

1. The left hand side of any equation should contain only one variable; the value of this variable will be the (output) or the solution of the equation.
2. The right hand side of the equation may contain abstracted values or arithmetic expressions that have one or more variables (inputs).

**Exercise 2:** Draw a flowchart to Solve a first degree equation:  $Y = 3X + 2$ .

**First: Define the problem**

**Output:** The value of “Y”.

**Input:** The number “X”.

**Solution:** Compute the value of “Y” from the equation  $Y = 3X + 2$ .

Second :Algorithm	Third :Flowchart
<p>1- Start</p> <p>2- Read the value of X</p> <p>3- Calculate <math>Y = 3 * X + 2</math></p> <p>4- Print the value of Y</p> <p>5- End</p>	<pre>graph TD; Start([Start]) --&gt; Input[/Input X/]; Input --&gt; Process[Y = 3 X + 2]; Process --&gt; Output[/Output Y/]; Output --&gt; End([End]);</pre>

**\* Activities:**

1. Draw a flowchart to compute the area and the perimeter of a rectangle, whose length and width are known, bearing in mind that the equation of area is: **Area** = **L** \* **W** and that of Perimeter is: **Perimeter** = 2 \* ( **L** + **W** ).
2. Draw a flowchart to calculate the area of a circle whose radius “R” is known, bearing in mind that the equation of area is: **Area** = 3.14 \* **R** \* **R**.
3. Draw a flowchart to calculate the number of years, bearing in mind that the number of months is known.

**The use of Branching "Decision" in flowcharts**

There are many problems that contain a question requires a Yes or No, or requires branching to other processes determined by flowchart.



**Exercise 1:** Draw a flowchart that will obtain exam scores from the user. Determine whether the score is greater than or equal 50 and display the message "Pass".

First: Algorithm	Second: Flowchart
1- Start 2- Enter the values of X 3- If $X \geq 50$ then 3-1 Print "Pass" 4- End	<pre> graph TD     Start([Start]) --&gt; Input[/Input X/]     Input --&gt; Decision{X &gt;= 50}     Decision -- True --&gt; Print[/Print "Pass"/]     Decision -- False --&gt; End([End])           </pre>

**Exercise 2:** Draw a flowchart for a program that will calculate the division of tow numbers. Determine whether the divisor equal (0) and display the message "Unknown".

First: Algorithm	Second: Flowchart
1- Start 2- Enter the dividend num1 3- Enter the divisor num2 4- If $\text{num2} = 0$ then 4-1 Print "Unknown" 4-2 Go to step 7 5- Else 5-1 $R = \text{num1} / \text{num2}$ 6- Print R 7- End	<pre> graph TD     Start([Start]) --&gt; Input[/Enter No1, No2/]     Input --&gt; Decision{No2 = 0}     Decision -- True --&gt; PrintUnknown[/Print "Unknown"/]     Decision -- False --&gt; Process[R = No1 / No2]     Process --&gt; PrintR[/Print R/]     PrintUnknown --&gt; End([End])     PrintR --&gt; End           </pre>

**Exercise 3:** Draw a flowchart for a program that obtains a number from the user. Determine the number type (Even or Odd) and print the result.

First: Algorithm	Second: Flowchart
<p>1- Start</p> <p>2- Enter N</p> <p>3- If N is divisible by 2 without remainder then :</p> <p>3-1 Print "even numbers "</p> <p>3-2 Go to step 5</p> <p>4- Else</p> <p>4-1 Print "odd numbers"</p> <p>5- End</p>	<pre> graph TD     Start([Start]) --&gt; GetN[/Get N/]     GetN --&gt; Div2{N divisible by 2}     Div2 -- True --&gt; PrintEven[/Print "Even"/]     Div2 -- False --&gt; PrintOdd[/Print "Odd"/]     PrintEven --&gt; End([End])     PrintOdd --&gt; End         </pre>

**Exercise 4:** Get temperature degree from the user, and print out the following results: "Above zero" , " Below zero " Or "Equal zero".

First: Algorithm	Second: Flowchart
<p>1- Start</p> <p>2-Enter D "temperature degree"</p> <p>3- If D = 0 then:</p> <p>3-1 Print "Equal zero"</p> <p>4- Else</p> <p>4-1 If D &gt; 0 then:</p> <p>4-1-1 Print "Above zero"</p> <p>4-2 Else</p> <p>4-2-1 Print "Below zero"</p> <p>5- End</p>	<pre> graph TD     Start([Start]) --&gt; ReadD[/Read D/]     ReadD --&gt; D0{D = 0}     D0 -- True --&gt; PrintEq0[/Print "Equal 0"/]     D0 -- False --&gt; Dgt0{D &gt; 0}     Dgt0 -- True --&gt; PrintAbove0[/Print "Above 0"/]     Dgt0 -- False --&gt; PrintBelow0[/Print "Below 0"/]     PrintEq0 --&gt; End([End])     PrintAbove0 --&gt; End     PrintBelow0 --&gt; End         </pre>

### \* **Activities:**

4. Draw a flowchart to enter two numbers, and then print “The largest is...?” And, “The smallest number is...?” .
5. Draw a flowchart to calculate the area of a circle whose radius “R” and displays the message “Not allowed” and exits (When the value of “R” is negative).
6. Draw a flowchart to find the **biggest number** among two numbers, In the case of equality output the message “Equal”.

### **The use of iterative loop in flowcharts**

**Exercise 1:** Print out the numbers from (1) to (3).

**First: Define the problem**

- **Output:** print numbers from 1 to 3
- **Input:** number M
- **Solution:** print number M and increment it by 1 then continue printing until the value of M become greater than 3

First: Algorithm	Second: Flowchart
1- Start 2- $M = 1$ 3- If $M \leq 3$ then: 3-1 Print M 3-2 $M = M + 1$ 3-3 Go To step 3 4- End	<pre> graph TD     Start([Start]) --&gt; M1[M = 1]     M1 --&gt; Cond{M &lt;= 3}     Cond -- True --&gt; Print[/Print M/]     Print --&gt; Inc[M = M + 1]     Inc --&gt; Cond     Cond -- False --&gt; End([End])                     </pre>

**Dear Student / Notice:**

- As long as the value of M does not exceed 3, the program prints value of M. When the value of M becomes 4 ;(  $M=4$ ), the condition becomes (False) and the program goes to step (4) to end the program.
- No of iterative is: (3 times).
- The value of variable M after ending loop is: (4).



**Exercise 2:** Modify the flowchart of the previous exercise to print the *multiplication table of No. 3*.

First: Algorithm	Second: Flowchart
1- Start 2- J =1 3- If J <=3 then : 3-1 Print J * 3 3-2 J = J + 1 3-3 Go To step 3 4- End	<pre> graph TD     Start([Start]) --&gt; J1[J = 1]     J1 --&gt; JLe12{J &lt;= 12}     JLe12 -- True --&gt; PrintJP3[/Print J * 3/]     PrintJP3 --&gt; Jplus1[J = J + 1]     Jplus1 --&gt; JLe12     JLe12 -- False --&gt; End([End])           </pre>

**Exercise 3:** Print out the *sum* of integer numbers from (1) to (3).




First: Algorithm	Second: Flowchart
1- Start 2- N=1 3- Sum=0 4- Sum = Sum + N 5- N=N+1 6- If N>3 Then 6-1 Print Sum 7- Else 7-1 Go to step 4 8- End	<pre> graph TD     Start([Start]) --&gt; Sum0[Sum = 0]     Sum0 --&gt; N1[N = 1]     N1 --&gt; SumSumN[Sum = Sum + N]     SumSumN --&gt; Nplus1[N = N + 1]     Nplus1 --&gt; NLe3{N &lt;= 3}     NLe3 -- True --&gt; SumSumN     NLe3 -- False --&gt; OutputSum[/Output Sum/]     OutputSum --&gt; End([End])           </pre>

### \* **Activities:**

- Draw a flowchart to print the *multiplication table* of any number entered.
- Draw a flowchart to print out *the even numbers* from (1) to (10).
- Draw a flowchart to print out *the sum of even numbers* from (1) to (10).

**\* Questions:**

**Q1: State whether the following statements are true (✓) or false (×):**

1. Flowcharts use symbols and lines with arrows to represent an Algorithm	( )
2. Can use any geometric shape when drawing flowcharts.	( )
3. The symbol  is used to represent both the start and the end.	( )
4. The rectangle symbol  is used to represent the data input operation.	( )
5. The flow of steps will always be from top to bottom or from left to right.	( )
6. The symbol  is used to represent a decision process in flowcharts.	( )
7. The problem means that an objective or output is required to reach.	( )
8. Preparing a cup of tea is an example of a problem.	( )
9. Problem solving is the steps, activities, and processes to be done to reach an output or objective.	( )
10. The program documentation is a set of procedures arranged logically for solving a specific problem.	( )
11. The program testing is writing down all the steps taken to solve a problem.	( )
12. Documenting the program means making sure that the program is free of errors.	( )
13. Algorithm is a set of procedures arranged logically for solving a specific problem.	( )
14. The program documentation is writing down all the steps taken to solve a problem.	( )
15. Testing the program means making sure that the program is free of errors.	( )
16. Flowcharts are diagram representations which depend on drawing some standard symbols to clarify the order of procedures to solve a problem.	( )
17. Flowcharts help to facilitate understanding of the problem, analyse and convert it to a program.	( )

**Q2: Choose the correct answer of the following phrase:**

**1- Steps, activities and procedures to be done to reach an objective or an output - can be called:**

- a. problem definition      b. problem      c. problem solving

**2- On drawing flowcharts we use:**

- a. standard symbols and lines      b. all geometric figures      c. one geometric figure

**3- A set of procedures arranged logically for solving a specific problem – called:**

- a. problem      b. algorithm      c. program testing

**4- Making sure that the program is free of errors – can be called:**

- a. program testing      b. program documentation      c. algorithm

**5- Writing down all the steps taken to solve a problem errors – can be called:**

- a. program documentation      b. program testing      c. flowcharts

**6- Problem-solving includes many terminologies, the terminology that expresses the preparation of a cup juice is:**

- a. flowchart      b. algorithm      c. problem

**7- Problem-solving approach includes many of the terminologies, the terminology that expresses the mathematical problem is:**

- a. Algorithm      b. problem      c. program design

**8- A diagrammatic representation that depends on drawing some standard symbols to clarify the order of procedures to solve a problem can be called:**

- a. flowchart      b. algorithm      c. problem

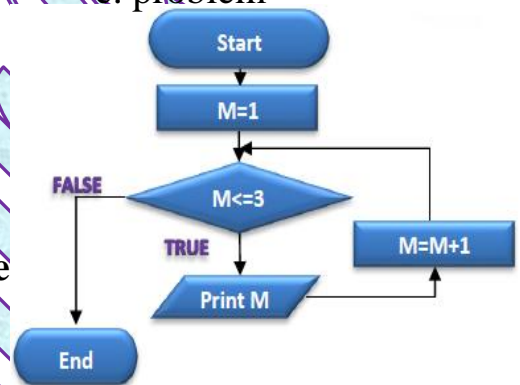
**9- In the following flowchart:**

**The number of iterations (print the value of M) is:**

- a- 2  
b- 3  
c- 4

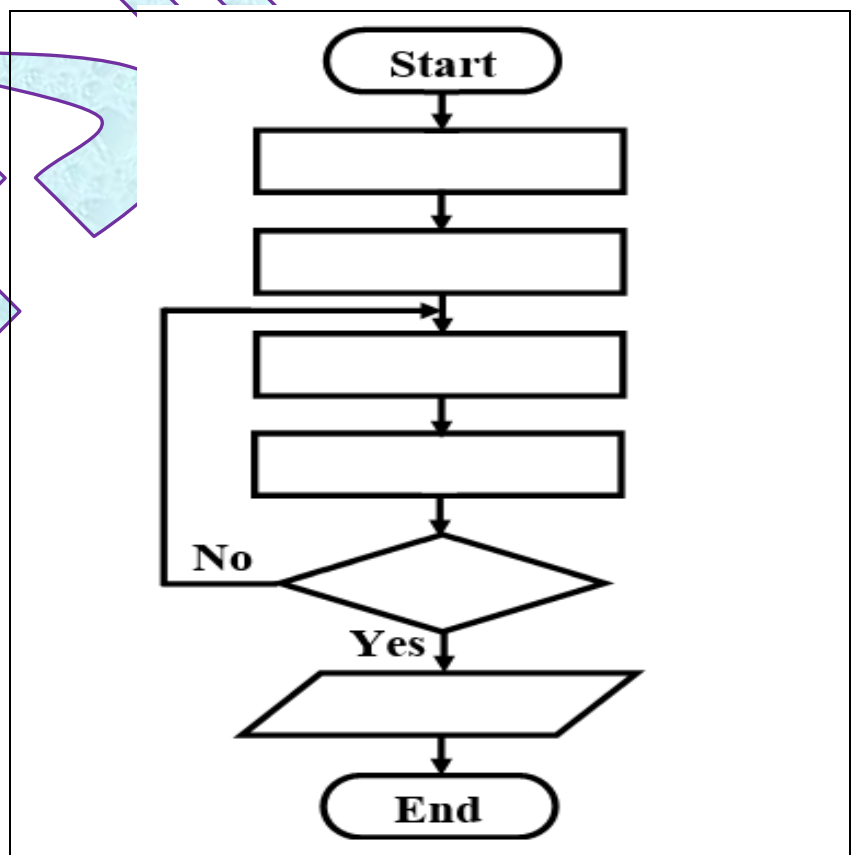
**10- In Flowchart of the previous question, the value of M after the end of the iterative loop equals:**

- a. 2      b- 3      c- 4



**Q3: The figure shows a flowchart that will print out the sum of even integer numbers from 1 and 100.**

N = N + 2
N = 2
N > 100
End
Sum = 0
Start
Sum = Sum + N
Print Sum



## Chapter 2: VB.Net Programming Language

- In this chapter, you will deal with Visual Basic.net program which will enable you to convert the steps of solving a problem into program codes that can be carried out.

### ✴ **The Language of Visual Basic.net:-**

- It is one of the high level programming languages and designed to be easy to learn as its commands and instructions use English language vocabulary and it can be used in many applications such as:
  - 1- Windows applications
  - 2- Web applications

### ✴ **Programming computer memory:-**

- Commands and instructions which are written in Visual Basic.net enable you to create objects in computer memory and every object has:
  - 1- **Properties** such as (size-colour- font) of the text written on the program interface.
  - 2- **Events** such as click on a command button.
  - 3- **Procedures**, each one contains commands and instructions which are carried out when calling this procedure.

### So, the Visual Basic.net is considered:

- **Object oriented** as its programs work through objects in computer Memory.
- **Event Driven** as commands and instructions are carried out as soon as certain event occurs.

### ✴ **The Language of Visual Basic.net and Framework.net:-**

#### The Framework.Net provides the following:

- **Libraries** through which we create the objects,
- **Runtime environment** in computer memory where applications produced by the language of Visual Basic.net language work in.
- **Compilers** which compile commands and instructions written in Programming language into machine code which the Computer deals with.

### ✴ **Visual Basic.net and (IDE) screen:-**

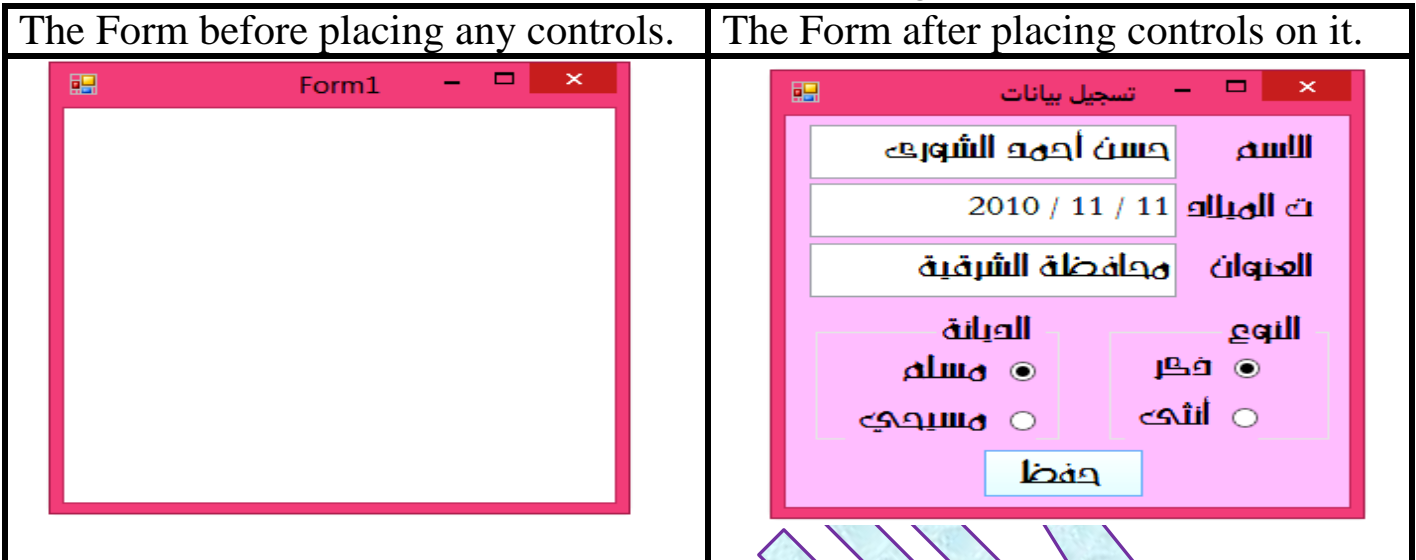
- The programmer of Visual Basic.net needs **Integrated Development Environment ( IDE )** which provides tools and merits to the programmer that help him create applications ( windows – mobile – web.....).
- Visual Studio represents **IDE**



## Some components of Integrated Development Environment IDE:

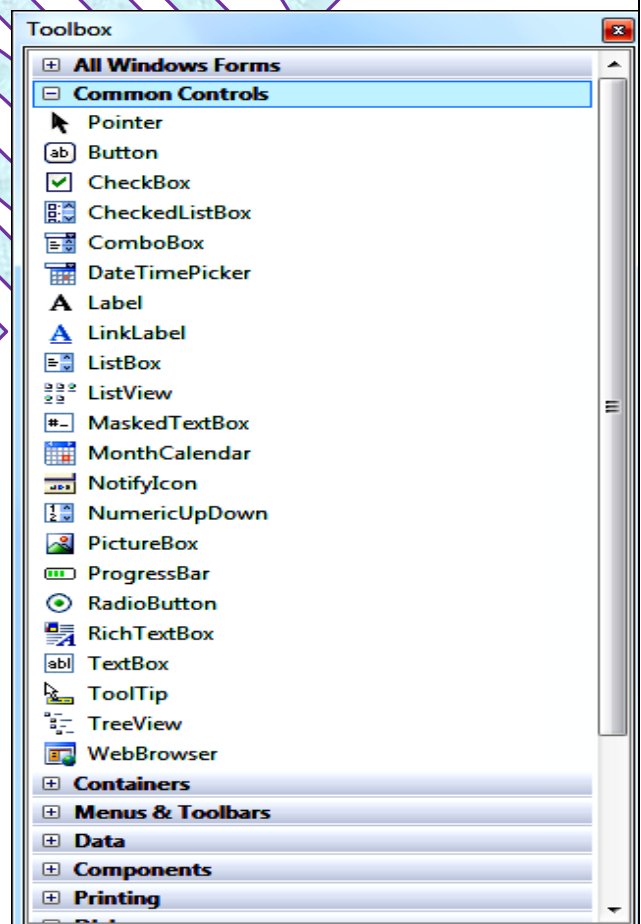
### 1. The Form:

- It is the interface which the user deals with through different controls such as Button, Textbox, label.....etc. as shown in figure:



### 2. Toolbox:

- It contains tools of controls which can be put on the Form and can be shown in categories as in Figure.
- Notice that there is (+) sign beside every category and when you click it, a group of tools controls appear and.
- You can show all tools of controls by choosing the category (All Windows Forms).



#### Some of the (common controls) :

1. Button.
2. TextBox.
3. Label.
4. ListBox.
5. ComboBox.
6. CheckBox.
7. RadioButton.

### 3. Properties Window:

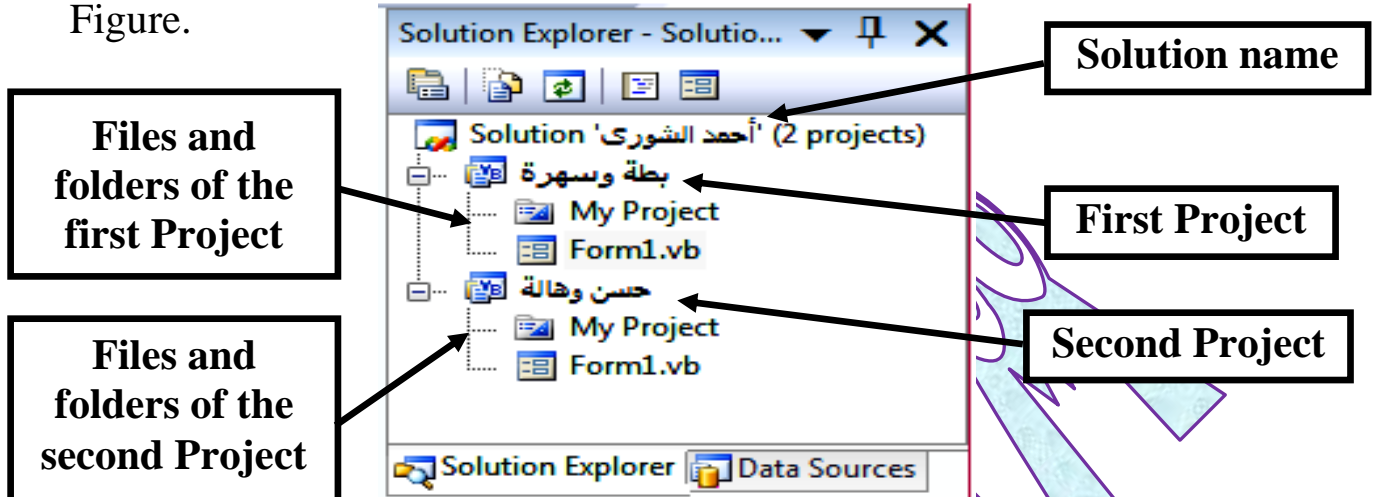
- Each tool has a group of properties which can be adjusted through "Properties Window". It contain two columns, **Property name** (left column), and **Property value** (right column).



- **Notice:** The shown Properties in Properties Window are different according to the active part on the IDE screen, displayed properties differ upon the selected element.

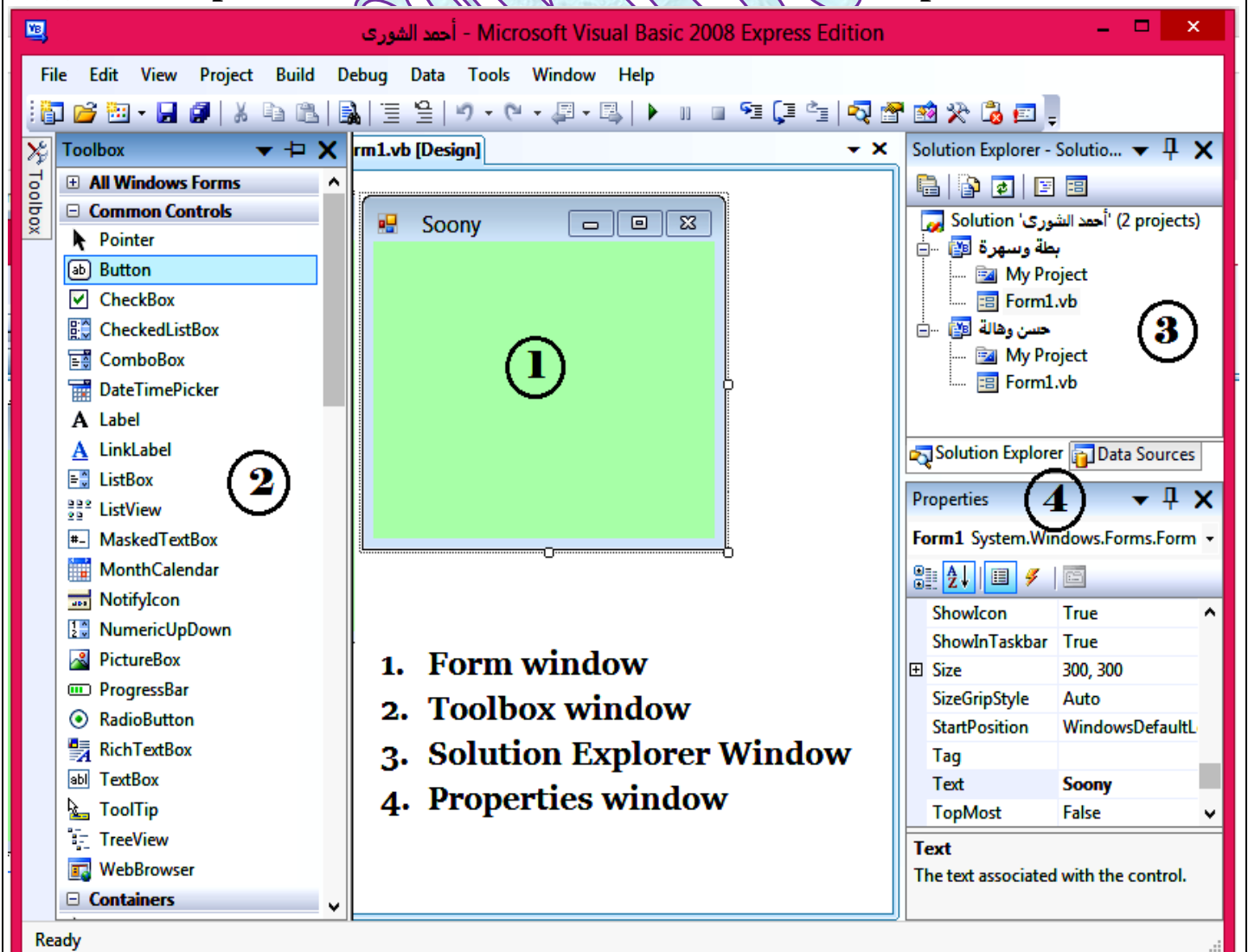
#### 4. **Solution Explorer Window:**

- There is a list of folders and files of the projects in this part as shown in Figure.



#### \* **(IDE) Window:-**

- (1) The **Form** window.      (2) The **Toolbox** window.  
(3) The **Properties** window.      (4) The **Solution Explorer** Window .



**\* Questions:**

**Q1: State whether the following statements are true (✓) or false (×):**

1. The VB.net language is one of the high level languages.	( )
2. The VB.net language is one of Event Driven languages.	( )
3. The VB.net language is the only high level language.	( )
4. The VB.net language is considered a high level language because it is easy to learn.	( )
5. The VB.net language is used in producing Windows applications and Web applications.	( )
6. The VB.net language is used in producing Web applications only	( )
7. VB.net language can't be used in producing Windows applications.	( )
8. Every Object is characterized by certain properties and certain behavior when a certain event occurs on it.	( )
9. Events and procedures which belong to any object in VB.net language are called properties.	( )
10. The name, the size and color of an object are all samples of events that can occur to the object in VB.net language.	( )
11. The name, the size and color of an object are all samples of properties of some objects in VB.net language.	( )
12. The Events are the commands and instructions which are carried out when a certain procedure occurs to the object in VB.net language.	( )
13. The procedures are the commands and instructions which are carried out when a certain procedure occurs to the object in VB.net language.	( )
14. Pressing click and D-click are samples of some events that can occur to an object in VB.net language.	( )
15. Framework.net contains Compilers, libraries and runtime environment.	( )
16. Compilers in Framework. Net are considered the environment of runtime for applications which are produced in VB.net language.	( )
17. Compilers are programs that translate commands written by the programmer from the high level language into machine language.	( )
18. Object Oriented Programming Languages are the languages that work through objects in memory.	( )
19. All programming languages which carry out a group of commands and instructions are considered as Event Driven languages.	( )
20. Visual Studio is considered IDE because it includes a group of tools, elements and characteristics necessary to produce applications.	( )

**Q2: Choose the correct answer of the following phrase:**

**1- Object oriented programming language depends on:**

- a- using Windows applications.
- b- Using Web applications.
- c- Objects in computer memory.

**2- You can produce Windows applications or Web applications by using:**

- a- Objects in computer memory.
- b- VB.net language.
- c- Properties and Events.

**3- Characteristics which describe the object such as size, name and colour are called:**

- a- Properties.
- b- Procedures.
- c- Events.

**4- Click on Button is:**

- a- Property.
- b- Procedure.
- c- Event.

**5- Commands and instructions which we want to carry out are called:**

- a- Properties.
- b- Procedures.
- c- Events.

**6- The Properties term refers to:**

- a- Properties that describe the object.
- b- Events that can occur to the object.
- c- Commands and instructions that are carried out.

**7-The Events term refers to:**

- a- Properties that describe the object.
- b- Events that can occur to the object.
- c- Commands and instructions that are carried out.

**8-The Procedures term refers to:**

- a- Properties that describe the object.
- b- Events that can occur to the object.
- c- Commands and instructions that are carried out.

**9-Libraries, Compilers and Environment of runtime of applications are the most important components of:**

- a- Object Oriented.
- b- Event Driven.
- c- Framework.net.

**10- IDE is called:**

- a- Visual Basic.net.
- b- Visual Studio.
- c- Framwork.net.

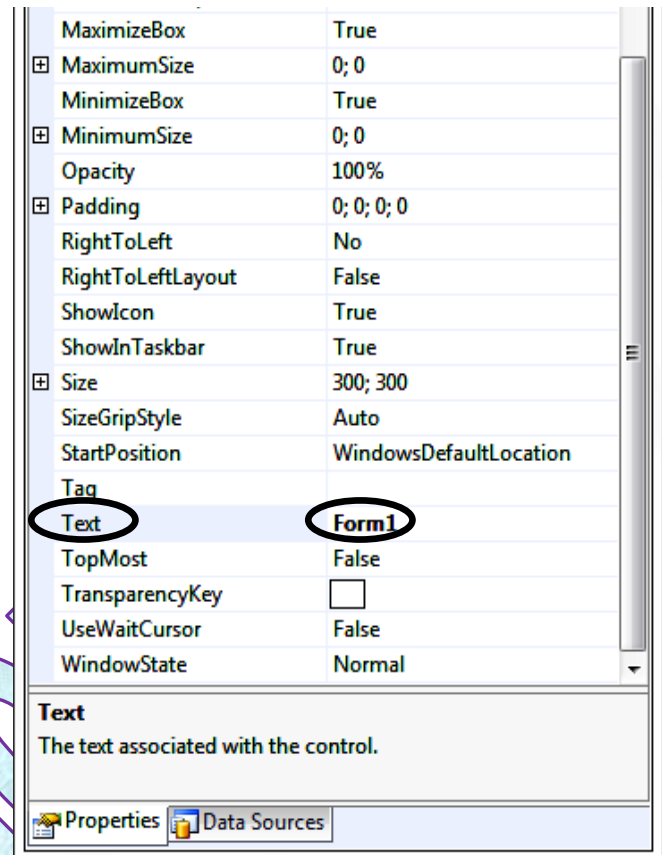
## Chapter 3: Controls




### \* The Form:

- It is the interface which the user deals with through different controls such as Button, Textbox, label.....etc. as shown in figure:

### Notice:

1. The column to the left is the properties list, such as Property (Text).
2. The column to the right is the setting list, which provides the current value assigned to the property; such as (Form1).
3. There are many **properties of the Form** are Shown from the following table:



No	Property	Function
1	Name	Name of the Form used in the code window.
2	Text	The appeared text on the title bar of the Form.
3	BackColor	The background color of the Form's window.
4	RightToLeft	The direction of Controls on the Form window from right to left.
5	RightToLeftLayout	The layout of Controls on the Form window from right to left.
6	FormBorderStyle	The Border style of the Form's window.
7	ControlBox	It controls the appearance or disappearance of Controlbox of the form window. 
8	MinimizeBox	It controls the appearance or disappearance of MinimizeBox of the form window. 
9	MaximizeBox	It controls the appearance or disappearance of MaximizeBox of the form window. 
10	WindowState	It defines the window state of the form normal, maximizing, or minimizing.



✱ **Notes on the previous table:-**

1. There are common properties among Controls such as: (*Name –Text – Font – ForeColor – BackColor – RightToLeft – Size – Location ....etc.*)
2. There are some properties which their effect doesn't appear on Controls until you set some other properties, for example the *RightToLeftLayout* property doesn't work unless the value *RightToLeft* equals *Yes*.
3. There are properties, if they are set, they are applied to Controls which are placed on this *Form* such as: *Font* and *ForeColor* properties.
4. The default value of the property (*Text*) and the property (*Name*) is the same and it is (*Form1*).
5. The value of the property *Text* appearing on the *title bar* of the *Form*.
6. The property *Name* effect appears on the *Form* only in *design mode*.
7. The effect of setting the properties from (2:9) appears directly on the *Form* in *design mode* and in *runtime mode*.
8. The property *WindowState* effect appears on *Form* only in *runtime mode*.
9. The value (*Sizable*) of the Property (*FormBorderStyle*) enable to control the *Form size* through its borders.
10. You can run the program ( *runtime mode*) by press *F5* key from keyboard.

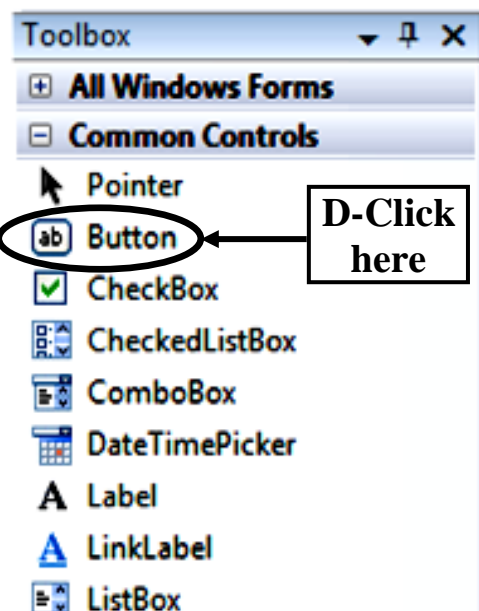
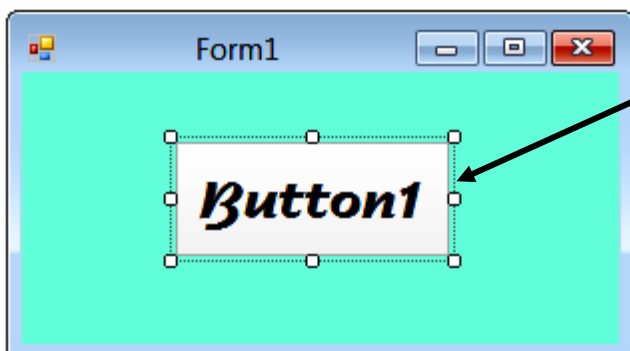
✱ **We will study the common controls as follow:-**

**1. Button :-**

A **Button** It is one of Controls which can be placed on the Form. When you click it, it does a certain task.

✱ **Placing the Button on the Form:**

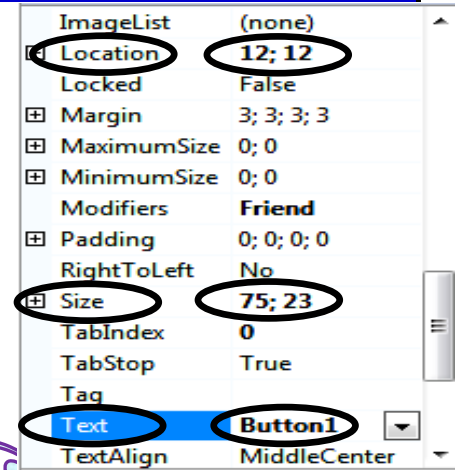
- By double clicking on the Button control on Toolbox, it appears on the Form in Design mode.
- The Button is displayed on the Form.
- Eight squares appear on the borders of the Button.





### \* Notice:-

- You can change the size of the Button by using the process of drag and drop using the pointer of the mouse through the eight squares.
- You can change the location of Button by using the process of drag and drop after moving the mouse pointer until it turns into a shape with four heads.



### \* The Properties of Button:-

No	Property	Function
1	Text	The appeared text on the Button and other controls.
2	ForeColor	Choosing the color of the text font appeared on the Button.
3	BackColor	Choosing the background color of the Button.
4	Font	Defining the (shape, size and style) of the text font appeared on the Button.
5	Location	The location of placing Button on the Form window. Placing Controls automatically on the Form on the co-ordinate (0;0) is in the left top of the Form.
6	Size	Defining the width and height of the Button on the Form. Size = 75;23 mean Width = 75 and Height = 23.

## 2. Label:-

A **Label** It is a tool used in showing a Text on the Form Window which can't be changed during program Runtime.

### \* The Properties of Label:-

No	Property	Function
1	AutoSize	The <b>Size</b> of the <b>Label</b> is defined automatically according to the written text if the value of property equals <b>True</b> .
2	BorderStyle	Choosing the border style of the Label.

### \* Notice:-

- You can change the size of Label manually by using the process drag and drop when the value of the property **AutoSize** is **False** through the eight handles in design mode only and its effect appears in design mode and runtime mode.



### 3. TextBox:-

A **TextBox** It is a tool used to insert (input) data from the user during program Runtime.

#### \* The Properties of TextBox:-

No	Property	Function
1	MaxLength	It defines the maximum number of letters t which can be inserted in the TextBox. The effect in runtime mode.
2	PasswordChar	It defines a symbol used instead of written text in case we have a password.
3	MultiLine	Allows multiple lines within the text box control tool.

A screenshot of a Windows form titled 'الاداة TextBox' in design mode. It contains three text boxes labeled 'Name', 'Password', and 'E-Mail', and a 'Sign In' button. The form is empty.

A screenshot of the same Windows form in run-time mode. The 'Name' text box contains 'Hassan Ahmed Alshoura', the 'Password' text box contains '\*\*\*\*\*', and the 'E-Mail' text box contains 'Soony@hotmail.com'. The 'Sign In' button is still present.

Form in design mode before you insert text

Form in run-time mode after you insert text

### 4. ListBox:-

A **Listbox** is used to show a list of items, to select one or more.

#### \* The Properties of ListBox:-

No	Property	Function
1	Items	A group of items shown in the ListBox.
2	Sorted	It defines whether the elements in the list are sorted or not.
3	SelectionMode	It defines whether it is possible to choose one item or more shown in the ListBox. The effect in runtime mode.

### 5. ComboBox:-

A **ComboBox** control displays a drop-down list from which one item can be selected.

A screenshot of a Windows form titled 'قارات العالم' (World Continents). It contains two ComboBox controls. The first is labeled 'اختر الدولة' (Choose the country) and has a dropdown list showing 'السودان', 'الصومال', and 'المغرب'. The second is labeled 'اختر القارة' (Choose the continent) and has a dropdown list showing 'أستراليا', 'أفريقيا', 'أمريكا الجنوبية', 'أمريكا الشمالية', and 'أوروبا'.

### \* The Properties of ComboBox:-

No	Property	Function
1	Items	A group of items which are shown in comboBox.
2	AutCompleteSource	It is a source of suggested items to select from.
3	AutoCompleteMode	It defines the method of list completing process. The effect in runtime mode.

### 6. GroupBox:-

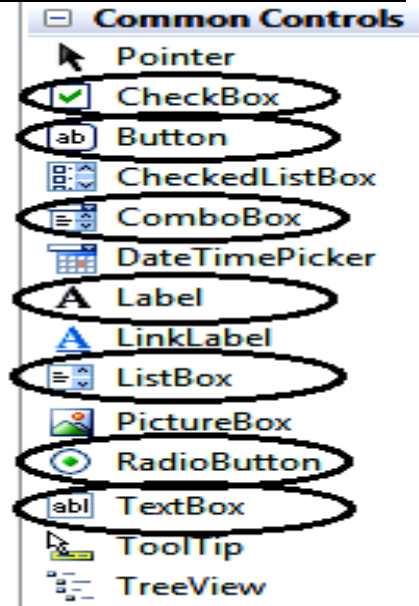
A **GroupBox** control is used to group other controls of the same function together on the Form window.

### 7. RadioButton:-

A **RadioButton** The program user selects **one** alternative only.

### 8. CheckBox:-

A **CheckBox** It is used for placing some alternatives to enable the user to select **One CheckBox or more**.



### \* The Properties of RadioButton & CheckBox:-

No	Property	Function
1	Checked	It shows whether <b>RadioButton</b> and <b>CheckBox</b> were been chosen or not.
2	Text	The text displayed on the (RadioButton & CheckBox).

### \* Notes on the previous table:

1. The effect of the "Text" property shows immediately in the design-mode, while the effect of the "Checked" property shows only in the run-mode.
2. You can use **GroupBoxes** such that "النوع" and "الديانة"; each group has a title and the user is allowed to choose one alternative from each group as it is shown in figure.
3. We can choose one "CheckBoxs" or more without put it in "GroupBox".

**\* Questions:**

**Q1: State whether the following statements are true (✓) or false (✗):**

1. The function of the property RightToLeft of the Form is to define the direction of Controls from right to left.	( )
2. The function of the property RightToLeft of the Form is to define the state of the Form on the screen in a position of Maximizing or Minimizing.	( )
3. Setting the property ControlBox of the Form can control the Form in a position of Maximizing during programme runtime.	( )
4. The property "Name" is used in showing a certain Text in the title bar of user window a name of the window.	( )
5. The property Text is used in showing a certain text the title bar of of user window.	( )
6. Setting some properties of the Form is applied to Controls which are placed on the Form.	( )
7. The effect of setting the WindowState property of the form appears only in runtime mode	( )
8. You can change the location of Command Button on the Form through Size property.	( )
9. You can change the location of Command Button on the Form through Location property.	( )
10. Placing Controls automatically on the Form on the co-ordinate (0-0) is in the middle of the Form.	( )
11. You can change the size of Label manually if AutoSize=true	( )
12. You can change the size of Label manually if AutoSize=false	( )
13. Textbox control tool is the only tool which has the property PasswordChar	( )
14. "Textbox control tool: is the only tool which has the property <b>AutoSize</b>	( )
15. ListBox and ComboBox share in "Items" property.	( )
16. ListBox and and ComboBox share in " <b>Suggest</b> " property	( )
17. GroupBox is the tool used in containg a group of controls, these controls have the same function on the Form.	( )
18. ListBox is the tool used in containg a group of controls, these controls have the same function on the Form.	( )
19. CheckBox can be used on the Form to choose the Gender of student male or female.	( )
20. Combobox is the control tool that allows the user to choose one element of several elements in the smallest possible space on the form window	( )



**Second: Choose the correct answer to complete each statement:-**

**1- The function of "Right to Left" property of the Form is:**

- a- define the direction of Control tools from Right to Left.
- b- define whether the layout of Control tools on the Form is from Right to Left.
- c- define the state of the window in a state of maximaizing or minimaizing.

**2- ControlBox property of the Form is helping to:**

- a- Showing or hiding of Maximaizing Box.
- b- Control the appearance of the Form whether it is in a position of Minimaizing / Maximaizing /Normal.
- c- Control the appearance or disappearance of ControlBox in the Form.

**3-The used property in showing a certain Text on the titlebar of a Form is:**

- a- Name
- b-Text
- c- FormBorderStyle.

**4-On setting some properties of the Form, they are applied on Control Tools which are placed on the Form (one of them is):**

- a- Name
- b- Forecolor
- c- Text

**5-The effect of setting this property doesn't appear unless in runtime mode (This property is):**

- a- FormBorderStyle
- b- WindowState
- c- RightToLeft

**6-The property which is responsible for the size, shape and effect of the Text font shown on the Button is :**

- a- Backcolor
- b- Forecolor
- c- Font

**7-You can change the position of the Button on the Form through the following processes except for:**

- a- drag and drop by the mouse
- b- setting Size property
- c- setting Location property

**8-You can change the position of the Button on the Form through:**

- a. setting Location property
- b-setting Size property
- c- the eight squares around the Button

**9-On inserting any ControlTool by pressing D-Click from the ToolBox on the Form , the appropriate place to be shown is :**

- a- coordinate (0, 0)
- b- the middle of the Form
- c- the position of ControlTool is different according to the size of the Form

**10-The size of Label is defined automatically on the Form if the property is:**

- a - AutoSize = False
- b- BorderStyle= FixedSingle
- c- AutoSize=True.

**11-You can change the size of control "Label" manually if the property is:**

- a - AutoSize = False
- b- BorderStyle= FixedSingle
- c- AutoSize=True.



**12-The following properties belong to TextBox except for:**

- a- AutoSize                      b- MultiLine                      c- MaxLength

**13-The Object TextBox is marked by one property:**

- a- AutoSize                      b- Name                      c- PasswordChart

**14-The right value which can be used to set the PasswordChart of the TextBox is:**

- a- Pw                      b- True                      c- \*

**15-The ListBox and ComboBox share in this property:**

- a- Suggest                      b- Item                      c- SelectionMode

**16-The ControlTool which is used in containing a group of controls that have the same function on the Form is:**

- a- ComboBox                      b- ListBox                      c- GroupBox

**17-The Control tool which can be used on the Form to choose Gender of the student "male" or "female" is:**

- a- RadioButton                      b- CheckBox                      c- TextBox

**18-The ControlTool which can be used on the Form and allows the user to choose more than one alternatives is :**

- a- RadioButton                      b- GroupBox                      c- CheckBox

**19-The ControlTool which allows the user to choose one item of 15 in the smallest possible area on the Form is:**

- a- ComboBox                      b- ListBox                      c- RadioBox

## *Chapter 4: Code Window*

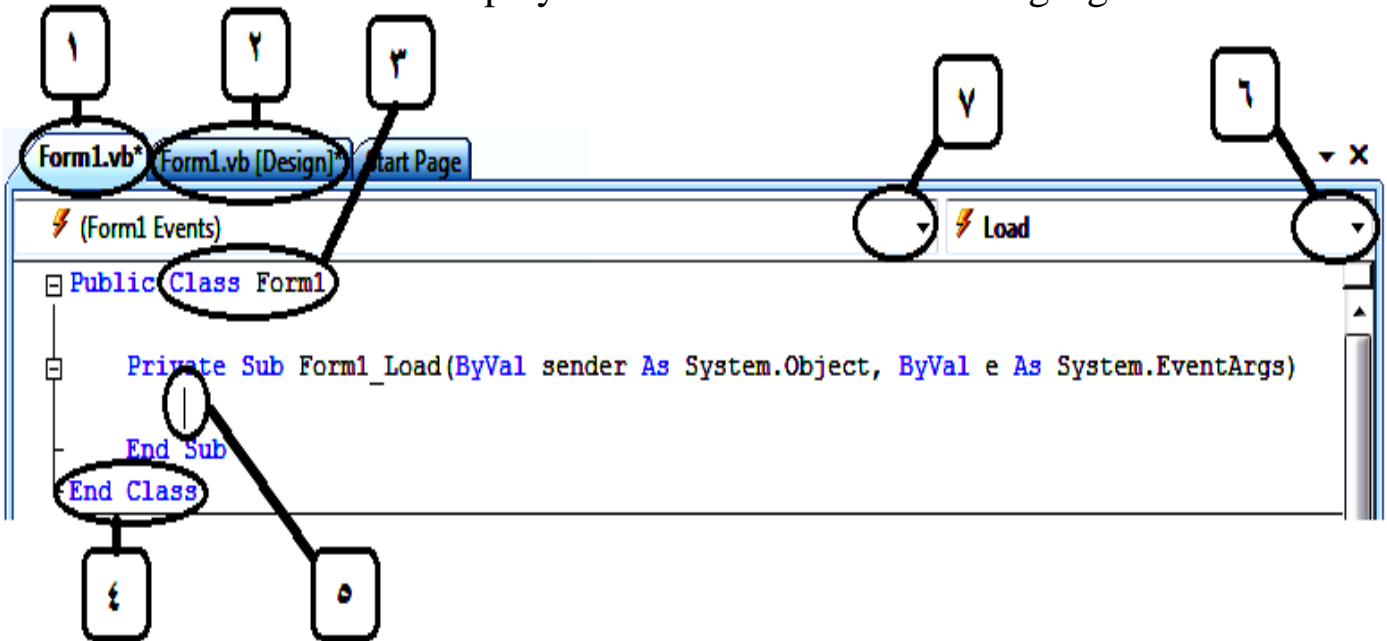
- **Visual Basic.NET language** provides a window through which we can write instructions and codes of the program called (**Code Window**)
- **To open the (Code Window) of (Form1) perform the following:**
  1. Make sure that the window Form is active.
  2. From the keyboard press (**F7**).

### **\* Open the (Code Window):-**

**We can open this window in the following methods:**

1. Pressing the "**F7**" key of the keyboard.
2. From "**View**" Menu choose the command "**Code**".
3. **Double click** the active tool.
4. Right click on the "**Form**" name in the (**Solution Explorer**) and from the shortcut menu, choose the command "**View Code**".

➤ The Code window is displayed as shown in the following figure:

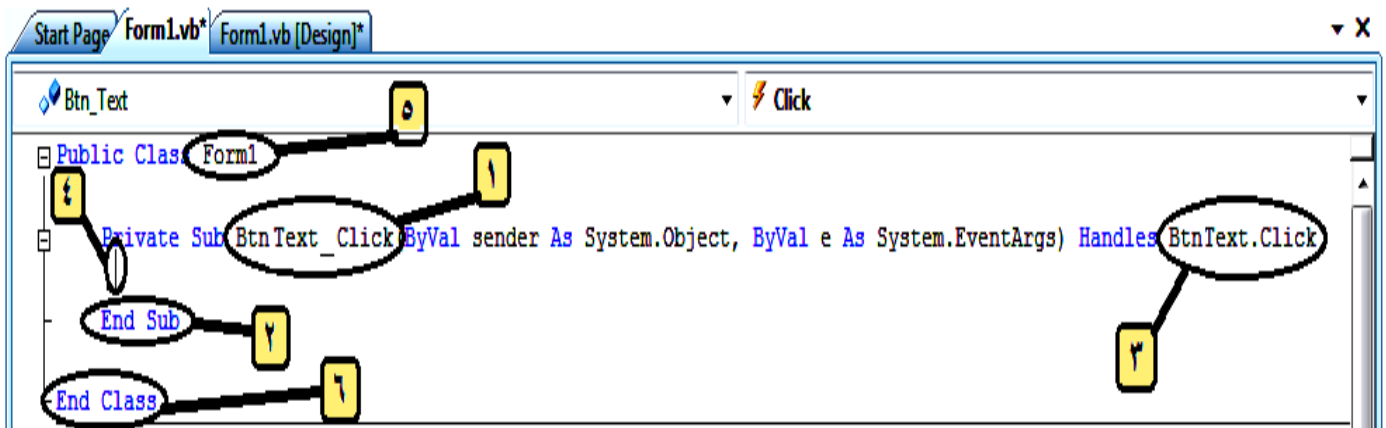


**This numbers refers to:**

1. Name of the file where codes are saved.
2. Name of the file where the Form window interface is saved.
3. The declaration of **Class**; its name is (**Form1**).
4. Space between two lines; to type codes for the Class (**Form1**).
5. The end of the class (**Form1**).
6. A drop-down menu of (**Method Names**) or events; associated with the Class selected from the (**Class Names**) menu.
7. A drop-down menu of (**Class Names**), which refers to the names of controls placed on the Form.

**\* Event Handler:-**

- It is a **procedure** which contains a code that is carried out when a corresponding **event occurs**.
  - **To create event handler do the following steps:**
    1. In the (Solution Explorer) window, right click the file (**Form1.vb**) and, select (**View Code**) from the context menu.
- As shown in the following figure:



1. The **procedure name** composed of (Object name, Event name).
2. **End** of procedure line.
3. **Object** and **Event** whose causes the call of the procedure.
4. Between the two lines shown; the code that will be executed on calling the procedure is written after the occurrence of the (**Event**).
5. The **declaration** of the **class** line (**Form1**)
6. The **end** of the **class** line.

### \* **Setting the (properties) programmatically:-**

**ControlName . Property = Value**

### \* **Examples:**

**1. Adjust the property (Text) for the Label (LblTitle) to be:**

“Arab Republic of Egypt”; the following statement is written:

```
Private Sub Button1_Click(sender As Object, e As EventArgs) Handles Button1.Click
    LblTitle.Text = "Arab Republic of Egypt"
End Sub
```

**End Sub**

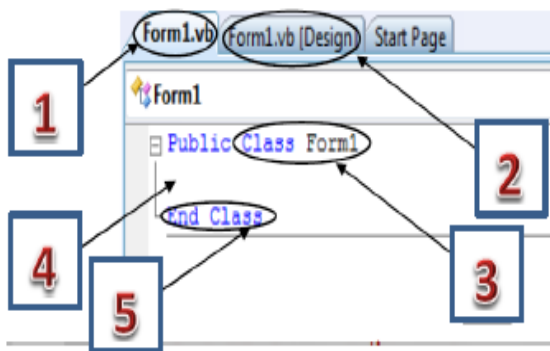
**2. Adjust the value of the property (ForeColor) for the Label (LblTitle) to (Blue);** the following statement is written:

➤ **LblTitle.ForeColor = Color.Blue**

**End,,, With My Best Wishes**

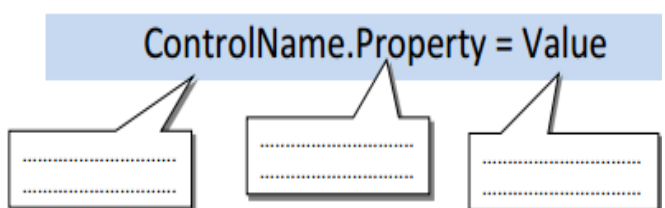
### \* **Questions:**

1) Complete the table with a number from 1 to 5



N°	Indicate
1	The end of class
2	The place to write the codes of the class
3	The name of the file that saves the design of the form interface
4	The name of the file that saves the code
5	The start of the class

7) Explain the components of the general syntax to adjust the properties of controls programmatically:



8) Explain the following codes :

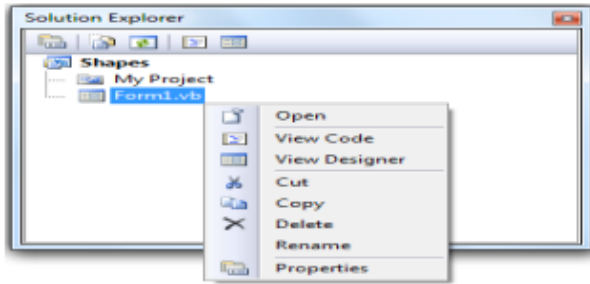
(A) **Button2.Text = "END"**

.....

(B) **Label1.AutoSize = True**

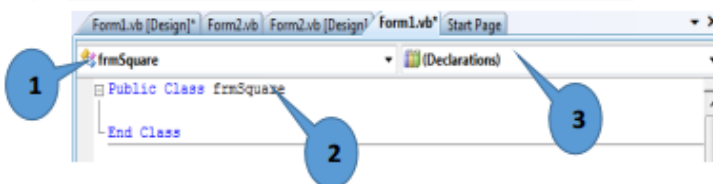
.....

3) complete the table using the next screen :

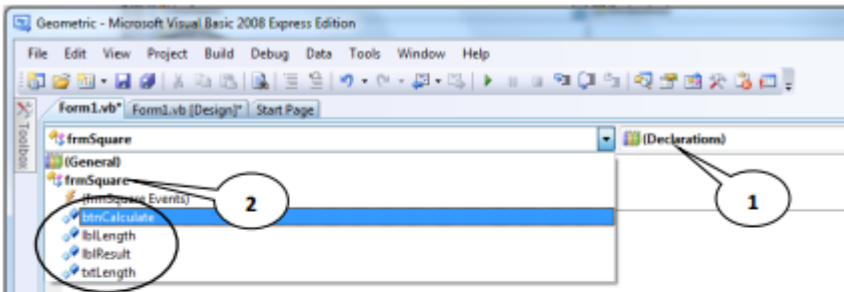


Q	Indicates
1	The name of the solution is .....
2	The name of the project is.....
3	We can enter the code window more than one way, through : <ul style="list-style-type: none"> <li>• Command ..... in the shortcut menu .....</li> <li>• function key .....</li> </ul>
4	The purpose of properties in the shortcut menu is .....

4) Complete the table using the following screen :

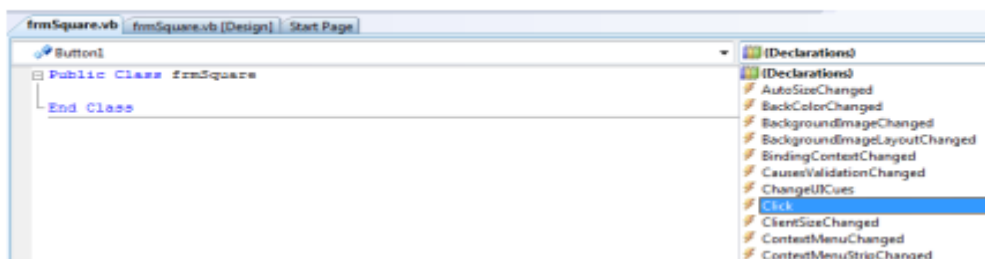


N	Indicates
1	.....
2	.....
3	.....



- 1- The number of forms is .....
- 2- number (1) refers to .....
- 3- number (2) refers to .....
- 4- List three different control tools from the previous screen
  - .....
  - .....
  - .....
- 5- The name of the class is .....

5) Answer the question using the following screen :



- a- From the previous screen write 3 different events :  
.....
- b- **frmSquare** refers to .....
- c- The events in the window belong to the control .....
- d- The name of the active tab in the window is .....



## Questions

**Q1: State whether the following statements are true (✓) or false (✗):**

1. Some Properties are not effective unless other Properties are adjusted first.	
2. There are no common Properties between one Control and another.	
3. A value should be assigned to any Property.	
4. You can modify the value of property assigned to a Control through the Toolbox.	
5. The value of the Property Size is 98; 108 means that the width is 108 and, the height is 98.	
6. Radio Buttons are used when the user has the possibility to choose more than one alternative.	
7. User can not choose any item in the control CheckBox.	

**Q2: choose the correct answer:**

- To provide the possibility to choose one and only one item use the control:  
A. RadioButton.      B. Checkbox.      C. GroupBox.      D. ListBox
- To allow the selection of one or more items choose the control:  
A. RadioButton.      B. ComboBox.      C. GroupBox.      D. Checkbox
- You can choose more than one item if you use:  
A. ListBox.      B. ComboBox.      C. GroupBox.      D. Textbox
- The project can run in test mode by pressing (.....) from the keyboard  
A. F2.      B. F8.      C. F5.      D. F4
- The Solution Explorer window contains:  
A. Properties.      B. Controls.      C. Projects.      D. The all.

**Q3: Write the scientific term for :**

- The (Property) that enables you to control the size of the Control (Label) using mouse pointer.
- The (Property) that makes the writing direction from right to left.
- Two (Properties) that have no effect unless you run the program.

**Q4: Put (✓) in front of right sentence and (✗) in front of the wrong:**

- When the control is active, we can change its size, move it or delete. ( )
- The "PasswordChar" property is for "Label" control. ( )
- We can run the program from VB by pressing F3 key in the keyboard. ( )
- We use the "ForeColor" property to change the color of writing. ( )
- We use the Toolbox to change the property of controls. ( )
- We use property "Name" to type a text in the Label. ( )
- We can select one option or more from "ComboBox" control. ( )
- We can't put any control while we are in the designing mode. ( )



9. In the designing mode we can resize the Form and other controls. ( )
10. To change the color of writing we use the "font" property. ( )
11. To draw Button on the Form, double click on it from Toolbox. ( )
12. We can change the font size of "Button" control by "Size" property. ( )
13. "GroupBox" is used to group a set of controls in one group. ( )
14. Checkbox is used to choose more than one option. ( )
15. There is similarity in the function between GroupBox and the form. ( )
16. From Checked property we know if the Radiobutton chosen or not. ( )
17. `Button1.Text = "First"` indicates changing the name of the button. ( )

**Q5: Match:**

Property	Function
1 Size	Indicates if the "RadioButton" has been selected or not.
2 MaxLength	Determine the possibility of writing more than one line within the control.
3 Checked	Determine the height and width of the controls.
4 MultiLine	Specifies the symbol that will be displayed instead of the text written.
5 PasswordChar	Determine the maximum number of characters that user can write in the "TextBox" control.

**Q6: Complete with the correct word:**

(BackColor – CheckBox – ForeColor – RadioButton – GroupBox – Checked – End sub – F5 – Private Sub – F7 )

1. In "Code window", write the command between ..... and .....
2. To test (run-mode) the project we click on ..... from keyboard.
3. To open Code window click on ..... from keyboard.
4. To change the background color we choose .....
5. The Button name may be starts with .....
6. The property ..... determines whether a "CheckBox" is used or not.
7. The control ..... is used to display alternative, user can choose one alternative only.
8. The control ..... is used to divide the controls into groups.
9. The control ..... is used to display alternatives and the user can choose more than one.

**Q7: Type the necessary code executing the following:**

- a) Changing the background color for "Button1" control into "Yellow".
- b) Changing the font color for "Button2" control into "Red".
- c) Arrange the items of the "ListBox1" control.
- d) Show the word "Batta" on the "Label1".
- e) Changing the name for "Button5" into "Hassan".

**Q8: Match:**

Property	Function
1 <b>AutoSize</b>	Adjust the name of the used control in the program code.
2 <b>ForeColor</b>	Adjust whether the control is automatically resized.
3 <b>Font</b>	Adjust the border style of the control.
4 <b>Sorted</b>	Adjust the font of the text displayed by the control.
5 <b>Name</b>	Adjust the text color on the control.
6 <b>BorderStyle</b>	Specify whether the items are arranged or not.

**Q9: Write the scientific term for:**

1. The Property that determine the size of the window on the screen, whether maximized or minimized or normal.
2. The procedure (called into action) when an event occurs.
3. The window that displays a list of files and folders for projects.
4. A group of logically arranged procedures to be executed.
5. A diagram that uses standard graphical symbols; to illustrate the sequence of steps required for solving a problem.
6. The window which we can write instructions and codes using "VB.Net".
7. An objective or an output that we have to achieve.
8. The Property that determines whether it is possible to select one or more item displayed in the "ListBox" control.
9. A control that used to group other controls of the same function together on the Form window.
10. A drop-down menu which refers to the names of controls placed on "Form".
11. A control that used to select one or more options in the same time.
12. The Property that determines the writing direction of controls on the "Form".
13. The Property that used to locate the Form's window on the screen.
14. A drop-down menu which refers to methods or events; associated with the items selected from the "Class Names" menu.
15. The Property which specifies the border outline of the controls.

**Q10: Choose the correct answer from the brackets:**

- 1- We use the Toolbox to create controls on the .....  
(Form – code – properties) window
- 2- We draw the Button from the (Toolbox – properties window – Form)
- 3- We can set the value of the Button Text from ..... window.  
(Code – properties – all the previous)
- 4- We can move the control on the form .....  
(Click & drag – properties window – all the previous)
- 5- To test (run-mode) the project we click on (F5 – F6 – F1)

## Sample Test

### Q1: Put (✓) in front of right sentence and (✗) in front of the wrong:

1. You can't change the size of the Form during design mode. ( )
2. The "Sorted" property is one of the properties of the control Button. ( )
3. The control Label allows space for writing during Run-time program. ( )
4. The "MaxLength" property used to determine the maximum number of characters can be written within the TextBox. ( )
5. We can open the "Code window" by pressing "F7" from keyboard. ( )

### Q2: Complete the following statements:

1. Could be come out three flow lines of ..... symbol.
2. The "Items" property is one of the properties the controls..... , .....
3. The controls that allow you to select **one or more** alternatives..... , ..... but the controls ..... allow you to select **only one** alternative, while the controls ..... , ..... do not used to select.
4. .... Is a group of logically arranged procedures to be executed.
5. .... An objective or an output that we have to achieve.
6. The properties that belong to the **Form** only..... , ..... , .....
7. The default value for the property "AutoSize" is ..... , but the default value for the property "Sorted" is .....

### Q3: Choose the correct answer from the brackets:

1. The value of the property..... do not appear in design mode and used only in writing code. (*Name - Text - Font - BackColor*)
2. To the possibility of identifying more than one items in the ListBox choose utility property..... (*Sorted - Items - SelectionMode - Name*)
3. We can adjust the value of any property from ..... window. (*Properties - Code - Properties and code - Tools*)
4. .... is a diagram that uses standard graphical symbols; to illustrate the sequence of steps required for solving a problem. (*Problem Solving - FlowChart - Algorithm*)
5. The ..... control allows the user a space for writing while the program is running. (*Button - Form - TextBox - Label*)

End,,, With My Best Wishes  
Now, With Exams



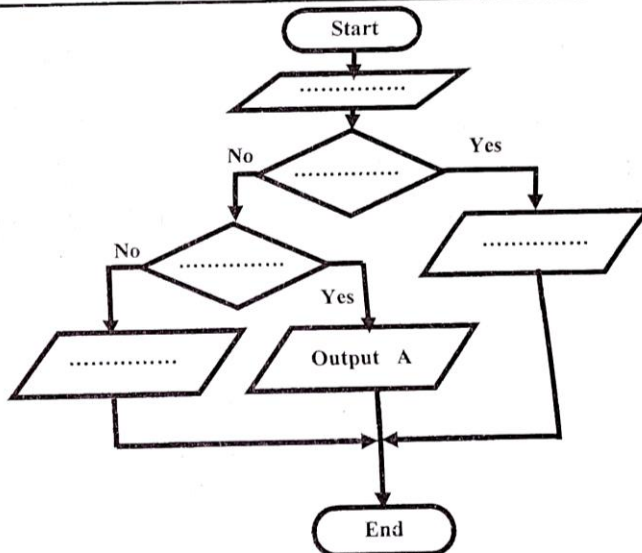
**Answer the following questions in your answer sheet :-**

**First Question:** Choose the correct answer from the following chooses :-

- First Question: Choose the correct answer from the given options.**
- 1 In the property window display a list of property the active ingredient offset .....  
A – A description of each property .  
B – Alternative of each property .  
C – Present a value of each property .
  - 2 The unit basic building ..... in programming languages and it was created from specific class .  
A – Property                                      B – Object                                      C – Method
  - 3 If tuning the property ( ControlBox ) by the value ( False ) the Control Box .....  
A – becomes available                      B – appears                                      C – disappears
  - 4 Adjust the properties programmatically formula uses ControlName . ..... = Value .  
A – Event                                      B – Property                                      C – Method
  - 5 The flow chart special solving the problem of printing the number of 1 to 10 containing .....  
A – Sequential                                      B – Branching                                      C – Looping

### Second Question :

Complete data on the following Flow Chart to find the smaller number among two numbers, the case of equality output the message " Equal " :-



**Third Question :** Put sign ( ✓ ) in front of the correct statement and sign ( × ) in front of the error term for each of the following :-

- 1 In the ( TextBox ) can be written any number of characters , numbers , symbols and signs without limit . ( )
- 2 To separate the two groups from the ( RadioButton ) use tool ( GroupBox ) ( )
- 3 In the Code window a list ( Class Name ) exposure control events that have been chosen tool from a list ( Method Name ) . ( )
- 4 In the following code Label1.Text = " I love Egypt " the value from object . ( )
- 5 When save the project for the first time shows the name of the project and the solution identical. ( )

### Fourth Question:

**A | Define all of the following :**

( 1 ) Program documentation .

**( 2 ) The Class .**

**( 3 ) Programming Language .**

**B** Write the code for all of the following :

( 1 ) Set the value of the property ( ForeColor ) for the control label ( lbl\_title ) to ( Blue ) .

( 2 ) Set the value of the property ( Visible ) for the control label ( lbl\_title ) to ( False ) .



Answer the following questions in your answer sheet :-

First Question: Put sign ( ✓ ) in front of the correct statement

- 1 During writing a program unintentionally make some mistakes we can not detect errors unless we begin entering data to the program with previously known results this is Program Documentation . ( )
- 2 The ( . NET Framework ) provides RunTime environment called (RunTime) in computer memory where application produced by the language of (Visual Basic . NET) language work in . ( )
- 3 The language of ( Visual Basic . NET ) on of the high level programming and designed to be hard learn . ( )
- 4 The ( RightToLeftLayout ) property doesn't work unless the value ( RightToLeft ) equals ( No ) . ( )
- 5 A drop – down menu of ( Method Name ) that displays the names of control on the form . ( )

Second Question :

Draw a Flowchart to print out of the sum of integer numbers from 1 to 50 Knowing when R = variable .

Third Question: Choose the correct answer from the following chooses :-

- 1 The ( Procedures ) term refers to :  
A ) A properties that describe the object  
B ) Events that can occur to to the object  
C ) Commands and instructions that are carried out
- 2 The property which is responsible for the size, shape and effect of the Text font shown on the ( Button ) is :  
A ) Font  
B ) Size  
C ) Location
- 3 The property uses to defines the maximum number of letters which can be inserted in ( TextBox ) is :  
A ) MultiLine  
B ) MaxLength  
C ) AutoSize

4 On inserting any control tool by pressing ( D – Click ) from ( Toolbox ) on the form , the appropriate place to be shown is :

- A ) The middle of the form
  - B ) Coordinate ( 0 , 0 )
  - C ) The position of control tool is different according to the size of the form
- 5 The right value which can be used to set the property ( PasswordChar ) of the ( TextBox ) is :

- A ) PW
- B ) True
- C ) \*

Fourth Question:

Answer the following questions :

(1) What does ( IDE ) provide to the programmer of ( Visual Basic . NET ) ?

(2) The use of ( CheckBox ) ?

(3) Knowing the ( ComboBox ) or more a property name which defines the method of list completing process ?

(4) Explain the following codes through your previous study for the general syntax to adjust the properties of control programmatically :

- A ) Button1 . Text = " Start "
- B ) Label2 . AutoSize = True

امتحان الفصل الدراسي الأول للعام الدراسي ٢٠١٧ / ٢٠١٨ م

محافظة الشرقية

م . التربية و التعليم ٢٠١٨ / ٦

للفصل الثالث الإعدادي لغات

مديرية التربية و التعليم

الزمن : ساعة واحدة المادة : الكمبيوتر وتكنولوجيا المعلومات ( باللغة الإنجليزية ) ( ملحوظة : يُصرف للطالب ورقة أسئلة باللغة العربية )

Answer the following questions in your answer sheet :-

2018  
أحمد الشؤرا

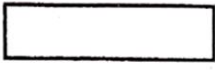

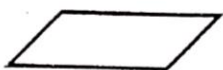
**First Question :** Put sign ( ✓ ) in front of the correct statement and sign ( × ) in front of the error term for each of the following :-

- 1 You can adjust the properties of controls programmatically using the following syntax :  
ControlName . Property = value . ( )
- 2 Documenting the program means making sure that the program is free of errors . ( )
- 3 Click on button is a procedure . ( )
- 4 The effect of setting the " WindowState " property of the form appears only in runtime mode . ( )
- 5 RadioButton enable the user to select more than one alternative . ( )

**Second Question :** Write the scientific term :

- 1 A set of procedures arranged logically for solving a specific problem.
- 2 It used in containing other controls that have the same function on the form window .
- 3 It has a Properties , Events , and Procedures written Visual Basic.net
- 4 It is a procedure which contains a code that is carried out when a corresponding event occurs .
- 5 It is a tool used in showing a text on the form window which can't be changed during programme runtime.

**Third Question:** Choose the correct answer from the following chooses :-

- 1 Solution Explorer shows a list of .....  
A – Tools of controls .      B – Controls properties .      C – Folders and files of the project
- 2 The terminology that expresses the preparation of a cup tea is .....  
A – Flowchart      B – Problem      C – Algorithm
- 3 The used property in showing a certain text on the title bar of a form is .....  
A – Name      B – Text      C – RightToLeft
- 4 To initialize a value to a variable we used . .....  
A –       B –       C – 
- 5 The object TextBox is marked by one property .....  
A – AutoSize      B – Name      C – PasswordChart

**Fourth Question :**

Draw a flowchart to print the multiplication table of number ( 9 ) , and write down the needed algorithm on it.

(( Finished , with our best wishes ))



2019

4 The control tool which can be used on the form to choose Gender of the student is .....

" Male " or " Female " is ..... C ) TextBox

A ) RadioButton B ) CheckBox

5 Writing down all the steps taken to solve a problem can be called ..... C ) FlowChat

A ) Program testing B ) Program documentation

### Third Question:

Write Algorithm only ( Without Drawing the Flowchart ) to print out the Result of dividing two Numbers . If divisor equals ( Zero ) print out " undefined " .

### Note :

Assume first number ( num 1 ), second number ( num 2 ) and the result ( R ).

### Fourth Question:

A ) Write the function of each property of the following :

(1) ControlBox .

(2) SelectionMode .

B ) Define each of the following :

(1) ToolBox .

(2) Class Name .

(3) Form .

(( Finished ))

Answer the following questions in your answer sheet :-

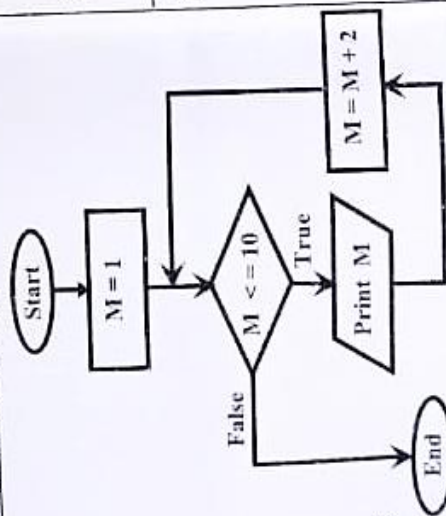
First Question: ( A ) Put sign ( ✓ ) in front of the correct statement and sign ( × ) in front of the wrong one :-

1 Flowcharts use standard symbols and lines to represent a problem algorithm . ( )

2 The VB . NET language is the only high level language . ( )

3 The right column of properties window shows property name . ( )

( B ) In the following Flowchart choose the correct answer :



1 The number of iterations to Print the value of M is :

A ) 10 B ) 5 C ) 6

2 The value of M after the end of iterative loop equals :

A ) 9 B ) 10 C ) 11

Second Question : Choose the correct answer to complete each statement :-

1 Libraries , Compilers and Environment of runtime of applications are the most important components of .....

A ) Object Oriented B ) Event Driven C ) .NET Framework

2 The effect of setting ..... property of the form appears only in runtime mode .

A ) FormBorderStyle B ) WindowState C ) WriteToLeft

3 The following properties belong to TextBox except .....

A ) AutoSize B ) MultiLine C ) MaxLength



### Third Question :

Answer the following questions in your answer sheet :

First Question: Choose the correct answer from the following chooses :-

- 1 Commands and instructions which we want to carry out are called .....  
A ) Properties B ) Events C ) Procedures
- 2 The left hand side of any equation contains ..... which used to carry ( output ) or the solution of the equation .  
A ) One variable B ) Two variables C ) Three variables
- 3 The Integrated Development Environment ( IDE ) has the following components except .....  
A ) Form window B ) ToolBox window C ) control panel window
- 4 A dropdown menu in the window code , that displays names of controls on the form called .....  
A ) Method name B ) Class name C ) Window name
- 5 Problem solving stages contains all of the following stages , except .....  
A ) Program documentation B ) Program marketing C ) Program design

Second Question : Put sign ( ✓ ) in front of the correct statement and sign ( × ) in front of the error term for each of the following :

- 1 Click on button is a property . ( )
- 2 The size of label can be change manually if "Autosize = false" . ( )
- 3 Documenting the program means making sure that the program is free of errors. ( )
- 4 The . NET Framework contains compilers , libraries and runtime enviroment. ( )
- 5 The flow line shows the order of an algorithm. ( )

(( Finished ))

### Fourth Question : Complet the following :

- 1 Property of ListBox tool which enable user to choose one item or more , is .....
- 2 The logically arranged procedures used to solve a problem are called .....
- 3 The result of running the code ( TextBox1. .... = "12" ) is defines the maximum number of letters which can be inserted in the TextBox is (12). letters.
- 4 VB.net contains ..... that translate commands and instructions into machins language .
- 5 The control tool which allaws the user to choose one or more than one alternatives is .....



### Third Question :

Answer the following questions in your answer sheet :

First Question: Write the No. from column [ A ] with suitable column [ B ] :

	[ A ]	[ B ]
1	The interface which the user deals with through different controls.	( ) ComboBox
2	It is a diagram that uses standard graphical symbols to illustrate the sequence of steps required for solving a problem.	( ) Form
3	A control displays a drop-down list from which one item can be selected.	( ) TextBox
4	The only control that marked by the property PasswordChar.	( ) Flowchart
5	The property that can't be change in run time mode.	( ) Name

### Second Question :

Put sign ( ✓ ) in front of the correct statement and sign ( x ) in front of the error statement for each of the following :

- In the code window MethodName menu displays the name of controls on the form. ( )
- Method used to solve a problem through logically arranged procedures called Algorithm. ( )
- Commands and instructions which we want to carry out are called procedures. ( )
- A list of folders and files of the projects called ClassName. ( )
- To disappearance of ControlBox of form window choose false value to property AutoSize. ( )

Choose the correct answer from the following chooses :

- Listbox and ComboBox share in ..... property.  
A ) Items B ) Suggest C ) SelectionMode
- To open the (Code Window) from the keyboard press .....  
A ) F5 B ) F2 C ) F7
- The terminology that expresses the preparation of a cup juice is .....  
A ) Event B ) Algorithm C ) Problem
- VB.Net executed commands and instructions are carried out as soon as certain event occurs as .....  
A ) Object oriented B ) Event Driven C ) Algorithm
- Making sure that the program is free of errors can be called .....  
A ) program documentation B ) problem solving C ) program testing

### Fourth Question :

- Draw flowchart for a program that will calculate the division of two numbers, if the divisor equals (zero) the message displays " Undefined " .

B ) Write the scientific term :

- It's a procedure which contains a code that is carried out when a corresponding event occurs.
- It is a tool used in showing a text on the form window which can't be changed during programme runtime.

(( Finished ))



Answer the following questions in your answer sheet :

First Question:

Put sign ( ✓ ) in front of the correct statement and sign ( x ) in front of the error statement for each of the following :

- 1 The program testing is writing down all the steps taken to solve a problem ( )
- 2 Every object is characterized by certain properties and certain behaviour when a certain event occurs on it. ( )
- 3 You can change the location of command button on the form through Size property . ( )
- 4 ListBox and ComboBox share in "Suggest" property. ( )
- 5 The value assigned to a property can be changed only from the properties window. ( )

Second Question : Choose the correct answer from the following chooses :

- 1 A set of procedures arranged logically for solving a specific problem can be called .....  
A ) problem B ) algorithm C ) program testing
- 2 IDE is called .....  
A ) Visual Basic.net B ) Visual Studio C ) Framework.net
- 3 The effect of setting this property doesn't appear unless in runtime mode (This property is).....  
A ) FormBorderStyle B ) RightToLeft C ) WindowState
- 4 To open the (Code Window) of form press .....  
A ) F5 B ) F7 C ) F4
- 5 The ControlTool which is used in containing a group of controls that have the same function on the Form is .....  
A ) ComboBox B ) ListBox C ) GroupBox

A) Explain the following codes through your previous study for the general syntax to adjust the properties of control programmatically :

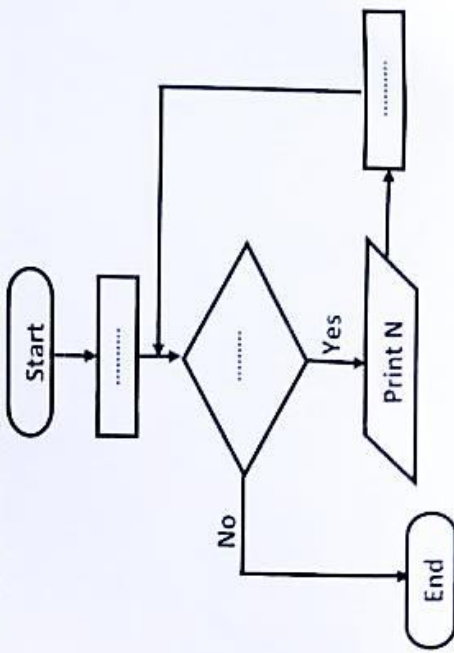
- 1 Button2.Text = "END"
- 2 Label1.AutoSize = True

B) Complete the following statements :

- 1 ..... contains compilers , libraries and runtime environment.
- 2 ..... is the tool used on the form to choose the gender of student "male" or "female".
- 3 ..... is the interface of the program which the user deals with.

Fourth Question :

The opposite flowchart print out the odd numbers from 1 to 10.



Redraw the flowchart then :

- 1) Fill in the spaces.
- 2) The number of iterations (print the value of N) is .....
- 3) The value of N after the end of the iterative loop equals .....  
( ( Finished ) )

امتحان الفصل الدراسي الأول ٢٠٢٣ / ٢٠٢٤ م  
للمادة : الكمبيوتر وتكنولوجيا المعلومات  
للصف الثالث الإعدادي العام و الرياضى و اللغات

محافظة الشرقية  
مديرية التربية و التعليم  
الزمن : ساعة واحدة

**Q1: Put (✓) in front of right sentence and (✗) in front of the wrong:**

1. Program documentation means making sure that the program is free of errors.( )
2. Automatically inserting controls on the Form window is at the coordinate (0, 0) in the middle of the Form window. ( )
3. Events and procedures of any object in VB.net are called Properties. ( )
4. The Label can be resized manually if the property AutoSize = False. ( )
5. Any geometric shape can be used to represent the solution steps when drawing a flowchart. ( )

**Q2: Choose the correct answer from the brackets:**

1. The set of commands and instructions that we want to execute is called .....  
( Properties - Procedures - Events )
2. When you set some properties of the Form window, they apply to the controls that are placed on the form. One of these properties is .....  
( Name - ForeColor – Text )
3. .... is a procedure that contains code that is executed when an event associated with it occurs.  
( Class Name - Event Handler - Code Window )
4. .... contains controls that can be placed on the form window.  
( Form - ToolBox - Properties Window )
5. A control that can be used to allow the user to select more than one alternative is.....  
( GroupBox – RadioButton - CheckBox )

**Q3: A) Answer the following questions using the following code:**

1. The name of the procedure is.....
2. The end line of the procedure is.....
3. The property used with the control Label2 is.....

```
Private Sub Button1_Click  
    Label2.text = " تحيا مصر "  
End Sub
```

**B) Write the scientific term for each of the following:**

1. Displays a list of project folders and files within the solution.
2. A property used with the ListBox tool to make its items sorted or not.

**Q4:**

**Draw a flowchart to print the sum of even numbers from 1 to 10.**

**((The questions are over, with wishes for success and good luck))**

W. S. Hour